



February 8, 1999

~~DELIBERATIVE PROCESS MEMORANDUM - CONFIDENTIAL DO NOT
RELEASE UNDER FOIA~~ *mt 10/22/99*

Subject: EPA Review of Whatcom County Ground Water Investigations
Report

From: Jennifer G. MacDonald
Assistant Regional Counsel

To: Robert Athmann & Keven McDermott
Civil Investigators

General Comments:

1. Because this report has important legal and technical implications, as an official agency document, it should be peer reviewed by appropriate staff (e.g., pesticides program staff).

2. The report would be greatly strengthened by the inclusion of citations or references to the source material for each assertion/statement in the report. In addition, to the extent people will be critically reviewing the document (e.g., the grower's attorney), such references will provide support for the statements made. I understand the concern about attaching too many documents to the report, but not all documents cited would have to be attached. Instead supporting documents could be maintained in a repository somewhere, for example, in our library and perhaps the local library. Also, existing footnotes should be standardized (even references to the same source appear different), and should more clearly identify the specific location of the source (e.g., the page of the document cited).

All source material has been referenced in the report either within the text or by footnote, and refer to the work cited in the "References" section. In response to your suggestion regarding attachments we have attached all the works cited to the report. Works cited are listed alphabetically by author or source in "References". Since most works cited are memos, page numbers are not given.

3. Some technical and legal terms of art are used inappropriately. Some examples are "...point sources..." in

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paragraph 3 of page 1; ·"·canceled·"· the line at the top of the page on page 6; and, ·"·public water systems·"· in paragraph 5 of page 43. Peer review of the document (e.g., by Safe Drinking Water and Pesticides program and ORC staff) may help to avoid this problem.

"point sources" is not used in a technical sense here, (para 3 of page 1).

"canceled" on page 6 is changed to "canceled the registration"

"public water systems" refer to the water systems identified in Whatcom County Health Dept. reviewed by me. No change made.

4. Many of the inferences seem one-sided, that is, for example, there are statements in the report that no one checked to see if drums were empty, but there is no statement regarding the lack of evidence that any of the drums found dumped anywhere or burned contained pesticides. I added to the Introduction- "Investigation indicated that it was common for drums to be used by growers as berry containers, for trash and as floats for irrigation pipes. No information was obtained that the drums used by the growers for these purposes contained any pesticides." Modification of this language would make the report more objective. For example, on one hand the report points out that Mr. Bader didn't say how he came to his conclusion that his investigation did not ·"·reveal illegal disposal of chemicals on the property,·"· (page 7, 3rd paragraph). On the other hand, the report doesn't point out the lack of evidence that there were pesticides in the drums when Mr. Poindexter concludes that the ·"·even if the drums were not related to the EDB issue, they clearly represented terrible waste handling practices.·"· In fact, the only statement in the report that seemed to support the inference that pesticides were in drums that were dumped at any site was the statement on page 10 by Elaine Atkinson that she observed dead vegetation around drums, but even that information isn't conclusive. On the contrary, there is information provided by the pesticide applicators indicating that the likelihood of EDB remaining in drums labeled as EDB drums left at the farms is very slim.

The point of our report is that Ecology was not able to obtain evidence whether the drums seen on the ground, in the creek were empty or not or even if there were buried drums. Bader states he saw "considerable amount of trash and rubbish" that "was uncovered at the time of the inspection" including "empty pesticide containers". In spite of that observation he does not say how he came to the conclusion that there was no "...illegal disposal of chemicals". Did he sample? Excavate the site? Take samples? You are right in that there are no statements in

our report that any drums found dumped contained pesticides because no one was able to find out, except for the testing of some drums by Atkinson, but no search for buried drums was conducted. Poindexter's statements were made in his interview and he had not made a determination that the drums were empty. That still remains an unresolved issue, however it is likely that the drums he saw were empty utility drums, but he didn't say that.

5. It is very confusing, to the point where it could perhaps be construed as misleading, that the sections of the report that pertain to Ecology are separated out. A much different picture of Ecology's efforts to address the groundwater contamination in the region would be shown simply by changing the organization of the document so that all of the sections pertaining to Ecology's efforts were at least placed under one heading © at least in section 9.0 and clearly marked as Ecology's. As the report is currently written, at first glance it appears as if there were lots of efforts by various groups, yet sections 9.2, 9.3, 9.4, 9.5, 9.6 all pertain specifically to the investigation efforts by Ecology and sections 7.2, 10.0, 11.0 and 12.0 all contain information about Ecology's efforts. In particular, 12.0 discusses Ecology's lawsuit against the pesticide manufacturer.

We organized the sections by subject rather than by agency: the allegations about drums in the creek, etc., the groundwater investigations by the different agencies, which was separate from Atkinson's investigation in 1992, the migrant camps, the applicators and the lawsuit, rather than by agency.

6. The use of the term "contaminated" is confusing. By "contaminated" do we mean that the pesticides were just detected? Or do we mean they were found to be above the MCLs or some other action level? We should be careful to be specific about this because it could be very misleading to the public depending on what we really mean. Moreover, what EPA determines is the appropriate action level significantly impacts the scope of the problem. In fact, there may be an issue about whether there is a continuing problem with drinking water at all, regardless of the latest information that the groundwater is contaminated. This is a question for the programs to answer.

Specific Comments:

The Executive Summary:

1. The purpose of this report should be stated, and the existence of the EPA Superfund Site investigation/assessment being conducted simultaneous with this report should be mentioned.

2. The statement in the second paragraph regarding the

circumstances "...to date..." should reflect the results of the 1998 EPA Superfund Site investigation/assessment.

3. The statement concerning ATSDR's conclusions regarding the risk that EDB and 1,2-DCP pose to residents did not seem to be supported by the text of the report. Also, has ATSDR concluded its health assessment? They reported at the last group meeting that they planned to conduct a health assessment and were gathering some samples for analysis within the past year as part of this effort.

Added to Section 9.4 - According to the Bellingham Herald of July 1, 1998, the Agency for Toxic Substances and Disease Registry (ATSDR) concluded that "long term exposure to pesticide-contaminated water by breathing and absorbing chemicals through the skin may pose a risk." A state Department of Health toxicologist concurred according to the article. The ATSDR final report was due in October.-

1.0 The Introduction:

4. The third paragraph contains a statement that "...essential sampling and investigative work was never conducted..." This statement does not acknowledge the fact that the Superfund program just completed its sampling and investigative work in the area. Perhaps the statement could say that the essential sampling and investigative work was not conducted at the time the allegations regarding improper storage and disposal of pesticides were received. **"by Ecology" is added although I feel it is clear in the context of the paragraph**

5. The statement that "...one cannot rule out the possibility that there are buried drums leaking pesticides into the aquifer in the Bertrand Creek area..." is troublesome and doesn't seem to add anything. Such a statement could be made about almost any hypothesis, but that doesn't mean they are supportable either. We should perhaps delete this statement. **No, but changed to read, "The allegations that there are buried drums leaking pesticides into the aquifer in the Bertrand Creek area has not been resolved."**

2.0 Elements of Investigation:

6. Although you, the civil investigators, were apparently instructed not to speak with the farmer's during your investigation (although later in the text there are references to an interview of Mr. Marty Maberry, one of the farmers), but Monica Tonel, Bob Drake and I met with them and heard their story. I have notes from that meeting, but cannot be a witness. Perhaps when Monica returns she could review her own notes and perhaps mine to refresh her recollection and prepare a statement regarding

the farmers side of the story. Their story may also be presented in a long letter that Mark Lee, the attorney, wrote to us. The information that the farmers provided included that in the 70's and 80's, the applicators brought the pesticides out in drums and left the empty drums in the fields after triple rinsing them. They recovered the rinse water and used it to fumigate. Since 1990 the applicators have used bulk containers and applied the pesticides directly from the trucks. This information is corroborated by the statements of the pesticide applicators in contained in this report. **We have rewritten Section 2.0, but our report is still only an historical review of the various agencies' activities and does not include EPA's site assessment or information from the growers, which we feel would be more appropriate as part of the site assessment or a PRP search, if it got to that stage. Marty Maberry was interviewed at Monica's request because she had received information that he had recently removed an underground storage tank and in fact, he responded to a 104(e) information request dated May 14, 1998. The information in his response also was not included in this report as well as the responses of other growers.**

3.0 Chronology:

7. The entry for January 1984 states that EPA, Region 10's Drinking Water Programs Branch received a call from a concerned citizen about EDB contamination in a private well and that EPA conducted an EDB ground water investigation. This investigation is notably absent from the text. What do we know about it? **The 1984 EPA investigation is briefly mentioned in Section 9.1, 4th paragraph and a copy of the report is Attachment 39. It was sort of the trigger for the DSHS to go ahead with a statewide sampling program for EDB contamination.**

4.0 Ethylene Dibromide:

8. See comment 2. of the General Comments above - citations or references to the source material for this information would really strengthen the document. **Reference to the Federal Register and Hoag article added.**

9. I don't understand the last sentence of the last paragraph of this section. The first phrase seems strange. Regarding the second phrase, does the 8 ppb number apply to drinking water? Has an EPA risk expert reviewed this section? **The reference document, a memo by Kimm has been included as Attachment 5 and the phrase added to the sentence "Kimm stated that..." EPA had no basis for making a lifetime risk assessment since it is not know when people started drinking the stuff.**

5.0 1,2-Dichloropropane:

10. See comment 2. of the General Comments above © citations or references to the source material for this information would really strengthen the document. **References added**

6.0 Bertrand Creek:

11. See comment 2. of the General Comments above © citations or references to the source material for this information would really strengthen the document - especially the section on hydrogeology. **References added** Has an EPA hydrogeologist reviewed this section? **Yes**

6.1 Location:

12. The first sentence refers to "[t]he Bertrand Creek study area." Who defined the "study area" and what criteria did they use? **added "as defined by Ecology based on pesticide application data applied to a plat map,"**

7.0 Clark, Enfield & Sheets:

13. See comment 2. of the General Comments above - citations or references to the source material for this information would really strengthen the document. It would be helpful, for example, to have Chris Poindexter's November 12, 1991 report in the repository at least. **We don't have it**

7.2 Department of Ecology:

14. See comment 5. of the General Comments above.

15. See comment 4. of the General Comments above - in particular, regarding Chris Poindexter's comments about the "Valley of the Drums." he said "even if the drums were not related to the EDB issue, they clearly represented terrible waste handling practices." No question is raised in the report regarding the lack of evidence supporting this comment © i.e., What was the basis for Chris's statement? Did he know if the drums contained pesticides? Couldn't they have been triple rinsed? Did he report that he saw any leaking? Even if he had seen leaking, did he collect samples from the drums? **added to the section, "...because he found one or two drums that contained residual liquid.", but he had not seen leaking or distressed vegetation. See the interview summary for more details of Poindexter's statements.**

16. See comment 2. of the General Comments above © sources generally for this section would be great, but particularly helpful would be a copy of the report Chris Poindexter prepared November 12, 1991, and support for the statement that "[t]he

Department of Ecology Site Hazard Assessment Plan would allow the agency to declare no further action on the site if the contamination level downstream was not high than the upstream samples. **·"· Moved this paragraph to page 13 where it fits better in the chronology** This last statement seems odd in light of the information contained in later sections about Ecology's efforts and the fact that they are still providing water to the site. Perhaps the problem lies with the meaning Ecology meant to convey with the terms **·"·no further action.·"·****The phrase refers only to the Enfield farm as a hazardous wasted site and Atkinson's plan to sample creek sediments was her plan to determine if the farm was a source of contamination to the creek. With a classification of "no further action" the farm became part of the general Bertrand Creek ground water study.** The public may construe this to mean that Ecology did not intend to take steps to protect human health in the area, which does not appear to be the case (because they are providing bottled water even now). Also, I think it's very important that we attach whatever documents support the fact that on November 17, 1992, Ecology sent drafts of affidavits that it prepared with suggested language for the growers workers to sign. **Attached**

17. On page 9, the report states that **·"·[a]lccording to field notes . . . Atkinson saw numerous empty drums on the ground at the sand pit on Enfield's property. . . ."** (Emphasis added). Yet the last sentence in that same paragraph that continues on to page 10 states that **·"·Atkinson did not describe whether the drums were empty or contained product.·"·****Changed**

18. What is the basis for the inference in the first sentence on page 14, first full paragraph? It states that **·"·[i]n spite of the fact Ecology had information that 1,2-DCP had been found in wells down gradient from the Clark well, Beusch dismissed the notion that the fill was a likely cause of contamination and concluded that the 1,2-DCP contamination in wells was the result of area-wide use of fumigants.·"·** **Beusch states it in her memo to Mike Gallagher on 1/28/93, Attachment 26.** What information do we have that supports the implication that the fill in the well might have caused the contamination in wells down gradient? **Only that Clark used the well as a dump. We interviewed a witness who provided the information anonymously that he saw Clark dump bags of pesticides in the well in 1986 but changed his story when we identified him and asked him to come forward.** What information do we have even that those wells are down gradient? **The ground water flow pattern for the Bertrand Creek area along Bob Hall Road is described as southerly in the Washington State Agricultural Chemicals Pilot Study, 11/90** Citing to sources would help here. This comment also applies to footnote 19. It's also unclear why the information Mr. Bader provided which is set forth in footnote 19 is not in the main text of the

document.

8.1 VanDiest Site & 8.2 Rutgers Site:

19. See comment 4. of the General Comments above. It would be more consistent with the inferential statements made elsewhere in the document to state that there was no information indicating that there were pesticide containers at these sites. **There were no statements to that effect in the county's reports, so it can't be said if there were or were not any pesticide containers in the dump sites they inspected. When interviewed Hensly and Kunesch couldn't say if they saw any or not.**

9.1 Department of Social and Health Services

20. The first sentence of the second paragraph, page 18, states that Dr. Beare of the State Division of Health "reaffirmed the state standard and action level for EDB in drinking water was the recommended limit of 0.02 ppb as stated in the 1983 EPA risk analysis." This is another example of where the source material should be cited @ we should be citing ourselves, not indirect sources. **Attachment 37** Moreover, this is the first mention of an EPA risk analysis and it seems strange that on page 5 the report states that EPA's MCL is 8 ppb for EDB. **8 ppb is the estimated excess cancer risk for a ten-day period** Ditto for the last sentence, first paragraph on page 19 which also refers to "EPA's health risk assessment and the recommended limit of 0.02 ppb for drinking water." **Ditto-0.02 was the limit established for long term exposure**

21. In the first sentence, third paragraph on page 19, a reference is made to Plew's report, but there is no indication of who Plew is. **Attachment 36** Also, see comment 2. in the General Comments above - the footnotes mentioning this reference are inconsistent (Plew or Plews) and certainly not detailed enough to assist the reader in finding the source.

22. The last sentence of the last paragraph of page 19 refers to the "Toxic Task Force" - what is this? Was it formed? Did it solve any of the problems it was expected to solve? **Footnote added to refer to Plews' report**

9.2 Department of Ecology EDB Investigation:

23. See comment 5. of the General Comments above. **See response to comment 5**

24. The last sentence of the last paragraph in this section, page 22, states that there was a recommendation by Ecology's contractors that additional sampling and more hydrogeological investigations be conducted in the area. Was this additional work

ever carried out? **Yes, by Mayer as detailed in 9.3 and the WA State Ag Chemicals Pilot Study in 1987 in Sect. 9.7.**

9.3 Western Washington University Study:

25. See comment 5. of the General Comments above. This study was contracted by Ecology, and although that is stated here, it gets lost. **Attachment 44**

26. The results of the sampling should at least be contained in the repository suggested in the General Comments as well as the letter referred to in the last paragraph of this section.
Attachment 45

27. The first sentence in the third paragraph refers to the MCL © it would be helpful to restate the MCL for EDB of 8 ppb in the text here, in part so it's clear to the lay reader that we do not mean the 0.02 level discussed most recently in the text. **The MCL of 0.02 for drinking water was meant**

9.4 Bottled Water Program:

28. See comment 5. of the General Comments above. This program was put together by Ecology, and although that is stated here, it gets lost. **Attachment 46**

29. See comment 6. of the General Comments above. In addition, the way the first full paragraph on page 23 is drafted, it may be misleading for other reasons, that is, it seems that the process by which Ecology determined who would receive bottled water was not based on a reasonable method. **See Attachment 46, it was based on wells found with EDB by Mayer** It can't be determined from what is in the text, however, whether Ecology's decision to provide bottled water was based on an action level Ecology was using. **Detection only it seems** Also, perhaps the people that received bottled water although they had wells with low levels of EDB were the same people who had 1,2-DCP in their wells. More information here would be helpful. The issue of a written policy is discussed a little in section 10.0 (second full paragraph, page 30), but even without a written policy, someone had to make the decision for the agency - was there any basis **Voluntary** for the decisions that were made regarding who received bottled water?

9.5 Department Ecology Hazardous Waste Cleanup Program Study:

30. The second sentence of the first paragraph should say:
"Included in the sampling plan were . . ."

31. The last sentence of the first paragraph states that "In December 1986 EPA still had not provided final health advisories for the forty-six pesticides identified as likely to leach to

ground water..." **Attachment 48** On page 42, the text states that EPA classified 90 pesticides as leachable, and 90 are also referred to in the third full paragraph on page 25. This is inconsistent. For these statements a reference seems particularly critical. **The leachable pesticides were identified by EPA but EPA had not issued the health advisories yet.**

32. The second sentence of the last paragraph states that "[p]hysical removal of EDB from the aquifer was not considered possible..." **Attachment 51** The next two sentences appear inconsistent with this statement. That is, if it is not possible, then it doesn't matter what happens to the lawsuit or whether Ecology has capacity. Expanding on why it was not considered possible would be helpful - it's a very important point.

9.6 Washington State Agricultural Chemicals Pilot Study:

33. Regarding the last paragraph on page 24, it is unclear whether the decision by Ecology to send the two letters referred to in the last two sentences was at all related to the events described in the first two sentences.

34. See comments 4., 5., & 6. of the General Comments above.

9.7 U.S. Geological Survey Pesticides in Ground Water Study:

35. The third paragraph refers to the 90 leachable pesticides listed by EPA. See comment 31. above.

36. See comment 2. of the General Comments above.

37. There are statements on page 26, last paragraph, attributed to Marty Maberry apparently obtained when he was interviewed by the civil investigators. Mr. Maberry is one of the growers in the area from whom the Superfund program sought access. This information seems inconsistent with the statements made early in the text regarding the growers. An explanation may help clear up this inconsistency.

38. It may be helpful to the public to include a statement about whether the wells with pesticides detected above the MCLs in the USGS study are receiving bottled water in either a parents or footnote to the third full paragraph on page 27 which discusses the results of the study. **There is only one well in the USGS study in the Bertrand Creek area and it is not identified well enough in the USGS material we have to match it with any well previously sampled.**

39. At this point in time, a statement at least about whether the sampling planned for September and October 1998 was conducted would seem appropriate.

10.0 Migrant Worker Camps:

40. See comment 6. of the General Comments above. The levels set out in this section are not above the MCL for EDB of 8 ppb, but that point is not made. **Again, the MCL used was 0.02 ppb. I list the contaminant levels in the first paragraph. Clear to me.** It's unclear throughout this section why statements were made by public officials that the drinking water was "contaminated". There is also a reference to the "recommended maximum contaminant level" (page 29, last sentence of the first full paragraph), yet no discussion about what this is. **Attachment 63** (See also the references to "RMCL" on page 30). The second full paragraph discusses uncertainty regarding DSHS's "authority to require the owners of migrant camps to provide safe drinking water for the migrant workers." Did the source material use the term "safe drinking water"? **No, used alternative water supply** (Emphasis added). What was the basis for this terminology? That is, what level was DSHS using to determine that the drinking water available to the camps was not safe? **Basis seemed to be if the contaminant was detected in a public water system above the RMCL or whatever level would concern DSHS.**
Attachment 65

41. See comment 3. of the General Comments above. In particular, is the term "public water systems" used appropriately here (second sentence, last paragraph, page 29; also second sentence, first full paragraph, page 30)? **Atkeson's term in interview**

42. What is the "proposed MCL for EDB"? **Atkeson's phrase in interview but I believe she meant the MCL given to the county by the state health department referred to throughout the report.** mentioned in the first sentence of the first full paragraph on page 30? The report states that the MCL is 8 ppb. This is confusing. **You've confused that 8 ppb MCL from the short term cancer risk estimated by EPA and the 0.02 ppb MCL for long term consumption of drinking water contaminated with EDB.**

11.0 Pesticide Applicators:

43. See comment 2. and 3. of the General Comments above.

44. The point that farmers did not apply EDB themselves, rather it was applied by the commercial applicator, gets lost in the last sentence of the second full paragraph on page 34. This is an important point. Perhaps more discussion about the implications of this statement would be helpful. For example, why was that the case - **Explained in paragraph 4 of section 11.1** were there rules about the practice? Were drums with EDB ever in the hands of the farmers, or were the only drums left at the farms empty? **Applicators say no** Regarding the rumors heard by the pesticide

applicators set forth in the third full paragraph on page 34, were the pesticide drums that they heard had been dumped and buried empty of pesticides? **No way to tell**

Given that EDB was handled only by the commercial applicators, how could drums alleged to have been dumped by the growers have contained product? What's the likelihood? **Nil**

45. Regarding the recollection of the applicator of an incident in which pesticide containers were burned, is there any information regarding whether the containers contained EDB or 1,2-DCP? **No**

12.0 Great Lakes Chemical Corporation Lawsuit:

46. This section should perhaps be peer reviewed by staff from ORC - with additional time, I'd be glad to assist with this. **I have a collection from the case file you are welcome to**

47. Was Ecology's view (set forth in section 9.5 above) that physical removal of EDB from the aquifer was not considered possible considered in its handling of this lawsuit? **No I didn't see it mentioned in any of the documents I reviewed.**

13.0 Conclusions and Unresolved Issues:

48. In contrast to the statements made in the first paragraph of this section, it would seem that this report should take into account the conclusions of the Superfund report here and that a fair answer to the question "[a]re there point sources of contamination in the Bertrand Creek area . . .?" is that no point sources have been found. The public will not understand why two reports issued by EPA draw differing conclusions. **We don't draw a conclusion that there are point sources, but only that the possibility was never thoroughly investigated by the state.**

49. Generally, the inferences in this section are troubling and seem to be a little too speculative. (For example, when EPA Superfund personnel visited the farms, the employment of drums as floats for the irrigation pipe was explained.) Is this section really necessary? **We don't discount that drums may have been used as floats but the photos in the attachments show drums not used as floats. In any event, I don't think drums in the creek are a contributing factor to ground water contamination as much as the burial of drums and improper disposal or spills would be. We feel the existence of dump sites presents a greater possibility of causing groundwater contamination than drums in the creek for whatever reason.**

13.4 Remedial action:

50. Peer review of this section by technical staff in the Superfund program would seem appropriate.

13.6 Pesticide application:

51. This section contains very broad statements and goes well-beyond a review of ground water investigations in Whatcom County. For example, what support is there for the statement that "...there has not been any movement toward restricting [the use of pesticides] in susceptible areas or encouraging the pesticide industry and agriculture to develop alternative or innovative practices to prevent contamination..." **Changed to read "...yet many are still being used in susceptible area and the pesticide industry and agriculture should be encouraged to develop..."** (Top of page 42). Also, the last paragraph of this section states broadly that "...ground water cannot be protected adequately from pesticide contamination" We have a responsibility to support such broad statements that will be taken seriously by the public. **I stand by that statement**

52. The second sentence of the first full paragraph on page 42 states that "...farmers have continued to apply these same pesticides to their fields,..." **Changed to read "...many different pesticides..."** yet EDB is restricted and no longer applied (perhaps the same is true for 1,2-DCP). Also the next sentence implies that use of soil fumigants, no matter the chemical, is always a problem. How do we know that?

13.7 Regulatory capabilities:

53. The statements regarding EPA's responsibility in the first paragraph are very broad, conclusory and unsupported. **Changed to read "...EPA did not get involved in the problems in the Bertrand Creek area since a public water supply system was not affected.** In general, statements are made in this section without any distinction between the different aspects of agency capabilities, that is, resources, authorities and political will. Perhaps speculation about the latter is not appropriate in this official report (for example, statements about the Assistant Attorney General).

Interview Summaries:

These were not reviewed as carefully as the narrative portion of the report, however, it seemed puzzling that the summaries of some of the confidential sources are included and some are not. Also, the summary of the statement of the confidential source contained on page 5-6 reveals the source's identity by naming the people who used to own their home.